

Studies on Victorian bryophytes 9: the genus *Hymenodon* Hook.f. & Wilson

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Abstract

The moss genus *Hymenodon* Hook.f. & Wilson (Rhizogoniaceae) comprises eleven species but is represented in Victoria by a single species, *Hymenodon pilifer* Hook.f. & Wilson. Its main habitat is the trunks of tree-ferns and trees (rarely rock or clay banks) in cool temperate rainforest. Its conservation status appears to be 'secure' nationally and in Victoria and Tasmania, but is uncertain in New South Wales and Queensland. (*The Victorian Naturalist* 125 (6), 2008, 169-171)

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Introduction

The genus *Hymenodon* was erected by Joseph Hooker and Thomas Wilson to accommodate a plant first collected from New Zealand (Hooker and Wilson 1844). Eleven species are recognised at present, of which two occur in the Caribbean and tropical South America and eight in South East Asia and the tropical regions of the western Pacific. Only one species, *Hymenodon pilifer* Hook.f. & Wilson, is known from Australia. Karttunen and Back (1988) reduced *H. sericeus* (from South East Asia) and *H. tenellus* (a New Caledonian endemic) to subspecies of *H. pilifer*. However, few bryologists seem to have accepted this reduction, and the highly reputable TROPICOS database does not recognise the subspecies (MBG 2008). In this paper *H. pilifer* is considered distinct from *H. sericeus* and *H. tenellus*.

Description

Hymenodon pilifer Hook.f. & Wilson, *London J. Bot.* 3: 548 (1844)

Dioicous. **Female plants** very small, pale green, sometimes slightly glaucous, to about 15 mm long, projecting out and down from the substratum. Base of stem enveloped in a dense tuft of reddish-brown papillose rhizoids. **Leaves** arranged all round the stem, more or less oval with a narrow hair-like projection at the tip (hairpoint), lamina typically $0.4\text{--}0.9 \times 0.2\text{--}0.35$ mm, hairpoint $0.2\text{--}0.5$ mm long; leaf margin plane, crenulate from projecting cell walls. **Costa** (midrib) distinct, pale, extending almost to the end of the lamina but not reaching into the hairpoint. **Cells** of the lamina mostly irregularly hexagonal

(but walls difficult to discern), \pm isodiametric, typically $12\text{--}15$ μm wide and long in mid-leaf (smaller towards margins), very thick-walled, each cell containing one chloroplast (rarely two) that almost fills the lumen; hairpoint consisting of a single long, narrow cell.

Female branch very short, hidden among the rhizoids. **Bracts** reddish-brown, lanceo-

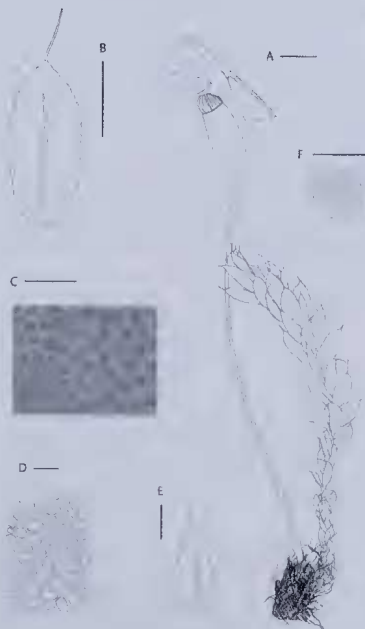


Fig. 1. *Hymenodon pilifer*. **A.** Plant with mature sporophyte, showing dehiscent calyptra and operculum. **B.** Typical leaf. **C.** Cells in mid-leaf, showing large chloroplasts. **D.** Exothecial cells. **E.** Female bract. **F.** Spore. (Scale bars: A = 1 mm, B, E = 0.2 mm, C, D = 100 μm ; F = 20 μm .)

late with an acute apex, margins plane, entire to weakly crenulate in upper half, cells long-hexagonal to rectangular, thin-walled and empty, surface smooth, costa distinct, to about 2/3 of bract length. **Seta** up to 15 mm long. **Capsule** ± ovoid to almost cylindrical, vivid green when young, pale brown when mature, about 3 × 1 mm including operculum; exothecial cells thick-walled, very irregular in size and shape. **Operculum** conical with a long, slanting beak. **Calyptra** with a long beak widening to a paddle-shaped base, not enveloping the capsule. **Peristome** single (outer peristome lacking), comprising 16 long, narrow, incurved teeth with vertical and horizontal striations. **Spores** up to 20 µm in diameter, very pale brown when mature, surface minutely warty. **Male plants** reportedly dwarf (not seen) (Fig. 1).

Distribution and habitat

Hymenodon pilifer is known from New Zealand, Tasmania, Victoria, New South Wales and Queensland. Gilmore (2006) did not include Queensland in the distribution of the species because he had not seen a specimen from there. However, Ilma Stone published details of a specimen from Lamington National Park (Stone no. 4226), and that specimen is in MEL (duplicate in MELU) along with some other Queensland collections.

In Victoria *H. pilifer* occurs almost exclusively in wet sclerophyll forest and cool temperate rainforest at scattered localities

from East Gippsland in the east to Byaduk Caves in the west (Fig. 2). It grows mainly on Soft Tree-ferns *Dicksonia antarctica* and Rough Tree-ferns *Cyathea australis*, although it is occasionally found on trees such as Myrtle Beech *Nothofagus cunninghamii*, Blackwood *Acacia melanoxylon* and Blanket-leaf *Bedfordia arborescens*, and rarely on rock or clay banks. The Byaduk Caves locality, where *H. pilifer* grows on basal in deep shade, is the westernmost extent of its total range and is a notable exception to the typical habitat.

Most of the Victorian localities are in large conservation reserves, and the rainforest habitat is generally protected from threats such as wildfire and timber harvesting, so at the present time *H. pilifer* may be considered secure in Victoria. For the same reasons it is also secure in Tasmania, where it is very common. In New South Wales and Queensland it is known from very few localities, so its conservation status in those states is in doubt and should be formally assessed.

Because Byaduk Caves is the westernmost occurrence of *H. pilifer* and is extremely isolated from other localities, its status at that site needs urgent assessment.

Similar species

Several other mosses share the habitat of *H. pilifer* and can be easily confused with it in the field (Fig. 3). The most common confusion is with *Leptotheca gaudichaudii* Schwägr., which has the same delicate



Fig. 2. Known distribution of *Hymenodon pilifer* in Victoria.

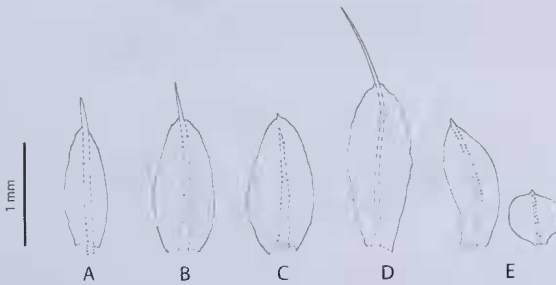


Fig. 3. Typical leaves of similar species in Victoria, shown in their moist condition. **A.** *Leptotheca gaudichaudii*. **B.** *Rhizogonium novae-hollandiae*. **C.** *Rhizogonium distichum*. **D.** *Leptostomum inclinans*. **E.** *Calomnion complanatum* – lateral and smaller dorsal leaves.

appearance and is largely confined to the trunks of tree-ferns. It is easily distinguished under a microscope because its costa is excurrent in a stout hairpoint. *H. pilifer* has been confused also with *Rhizogonium novae-hollandiae* (Brid.) Brid., which has a shortly excurrent costa, *Rhizogonium distichum* (Sw.) Brid., which lacks a hairpoint, and *Leptostomum inclinans* R.Br., which is a much larger species that grows only on tree trunks, usually in large cushions. A possible but less likely candidate for confusion is *Calomnion complanatum* (Hook.f. & Wilson) Lindb., which has an excurrent costa and a row of smaller, almost circular leaves on the dorsal side of the stem.

Representative specimens examined

Victoria – Sealers Cove, Wilsons Promontory, Mueller 171, 1854, MEL-31121; between Cape Otway and Cape Patton, Walter s.n., 1874, MEL-31120; Dandenong Ranges, Luchman s.n., 1891, MEL-31118; Barramunga Creek Education Centre, Otway Range, Beaglehole 73230, 11 Feb 1952, MEL-1042667; Maits Rest, Otways, Scott s.n., 27 May 1971, MUCV-611 (MELU); Byaduk Caves, Stone 9520, 3 Oct 1974, MEL-2190572; Melba Gully, Otways, Fuhrer & Pike s.n., 12 Dec 1984, MUCV-6166 (MELU); Kallista, Dandenong Ranges, Tomlinson s.n., 21 Aug 1985, MUCV-6482 (MELU); Chinaman Creek, Wilsons Promontory, Scott s.n. 17 Nov 1994, MELU-2999; MEL-242703; Toora–Gunyah Gunyah Road near Foster, Streimann 65283 & Pócs, 20 Sep 1999, CANB-610263, MEL-2100292; Anga-

hook–Lorne State Park, Klazenga 5999, 23 Oct 2004, MEL-2131749.

Tasmania – Macrobies Gully, Bastow 66, Sep 1886, MEL-31121; Wellington Rivulet, Weymouth 100, 15 Dec 1888, MEL-2068119; Hot Springs Creek, MJ Brown 1259 & Neyland, 13 Aug 1985, CANB-376842, MEL-2037379; Russell Falls, Mount Field National Park, Stone 3250, 17 Nov 1967, MEL-2135188.

New South Wales – Monga State Forest, Streimann 51597, 13 Apr 1993, CBG-9308148.

Queensland – Border Track, Lamington National Park, Stone 4226, 19 Aug 1969, MEL-2140552, MELU (herb. Stone); Bunyip Falls, Lamington National Park, Stone 4464, 21 Aug 1969, MEL-2141638.

New Zealand – Taranaki, Fleischer B85, Apr 1903, CANB-225501; Waiatai Valley near Wairoa, Sainsbury s.n., 27 Aug 1933, CANB-360740; Rimutaka Forest, Streimann 58071, 10 Nov 1995, CBG-9704230.

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